

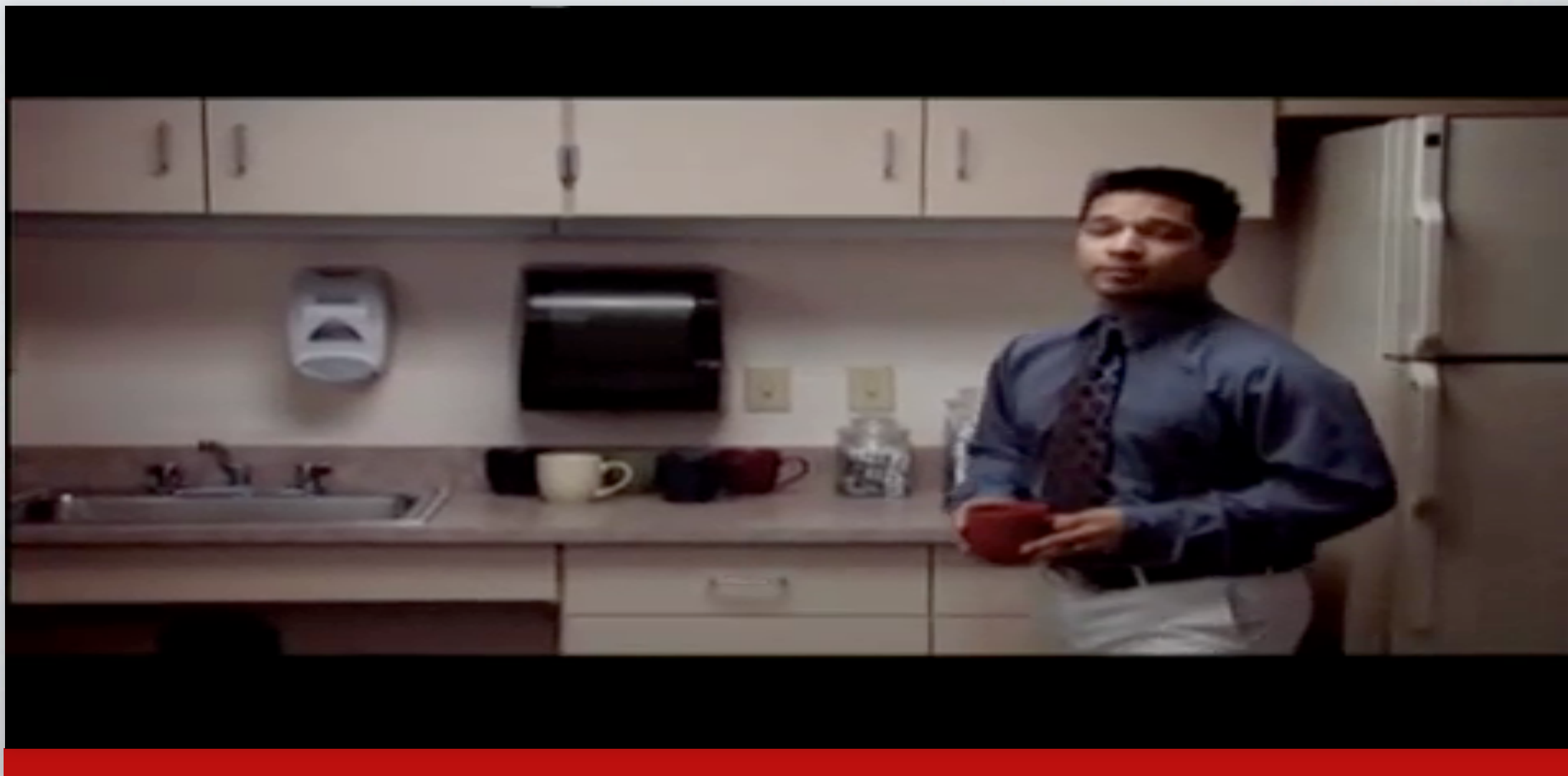


# Accessing the Ideas Cloud

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# The Top Ranked Super Bowl TV Commercial from 2008





# Doritos Ad Beat 51 Big Budget Advertisers

- PepsiCo launched ad contest in 2006 against advice of ad agencies and internal dissent
- Contest generated 4000 entries – ads selected by community
- Total spend \$2.5M – free publicity \$36M
- Knocked out Budweiser's 10 year running streak



# Joy's Law Haunts Most Innovation Efforts

“No Matter Who You Are, Most of the Smartest People Work for Someone Else”

Bill Joy, Cofounder Sun Microsystems





# Professor Bob Langer from MIT is Co-Founder of Tissue Engineering Field

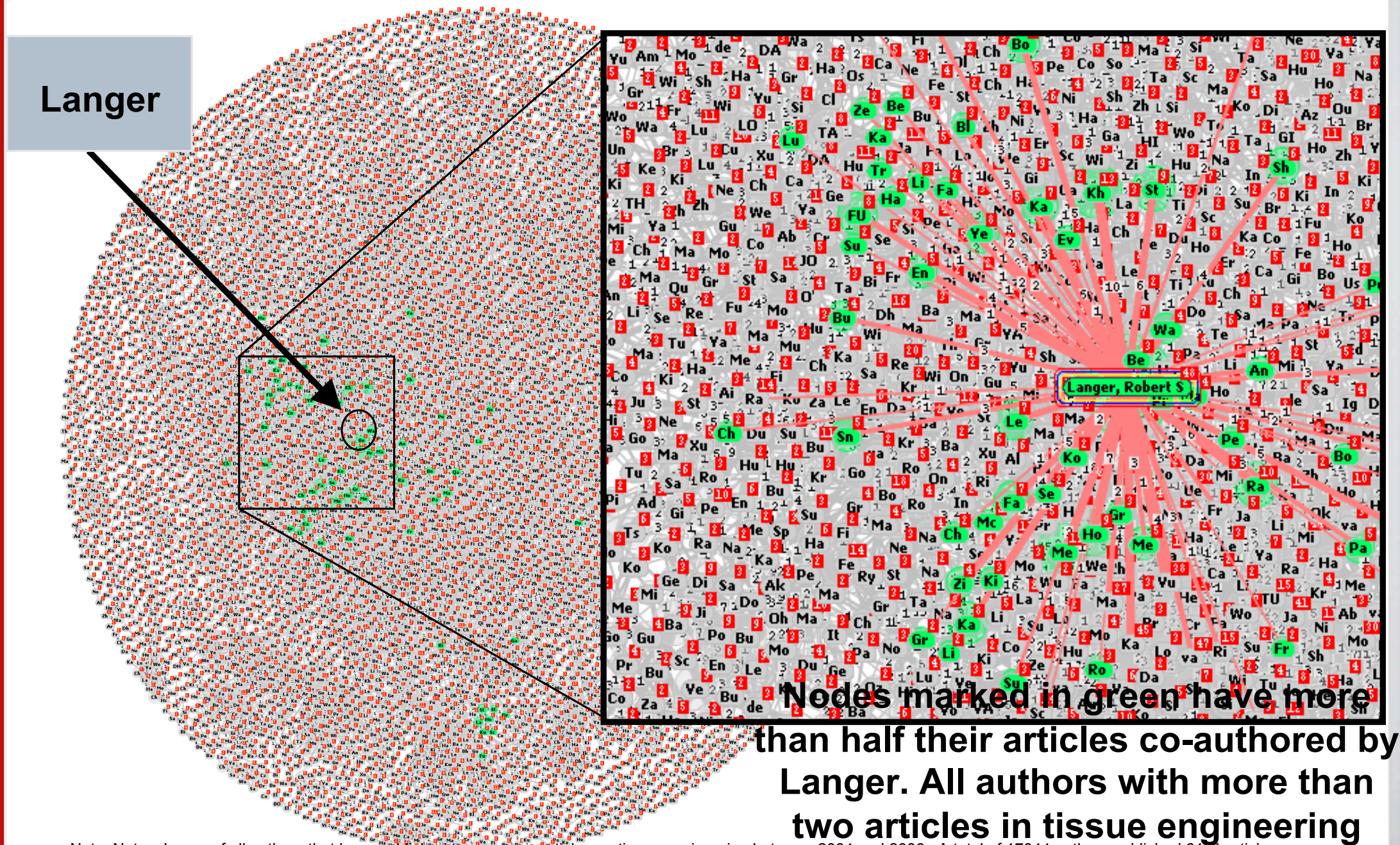
- MIT Institute Professor (one of 12)
- Over 600 patents
- Over 1000 scientific papers
- Largest biomedical engineering lab with over 100 researchers
- Youngest person to be elected to National Academy of Sciences, National Academy of Engineering and Institute of Medicine







# Joy's Law in Tissue Engineering 6131 Articles by 17,044 Authors 2004-2006



Note: Network map of all authors that have published two or more articles on tissue engineering between 2004 and 2006. A total of 17044 authors published 6131 articles.  
Source: Pubmed database, BCG analysis



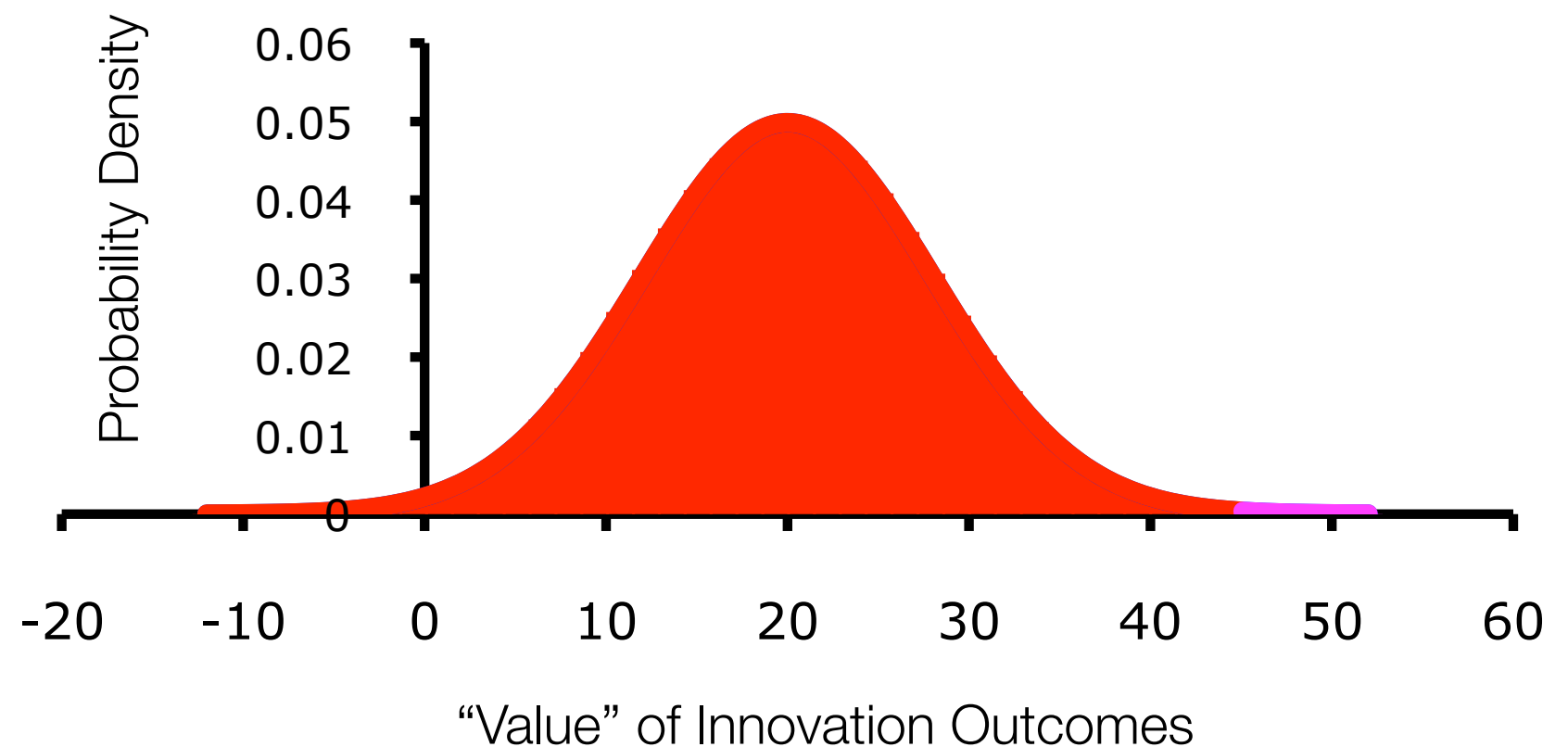


# The Causal Explanation for Joy's Law

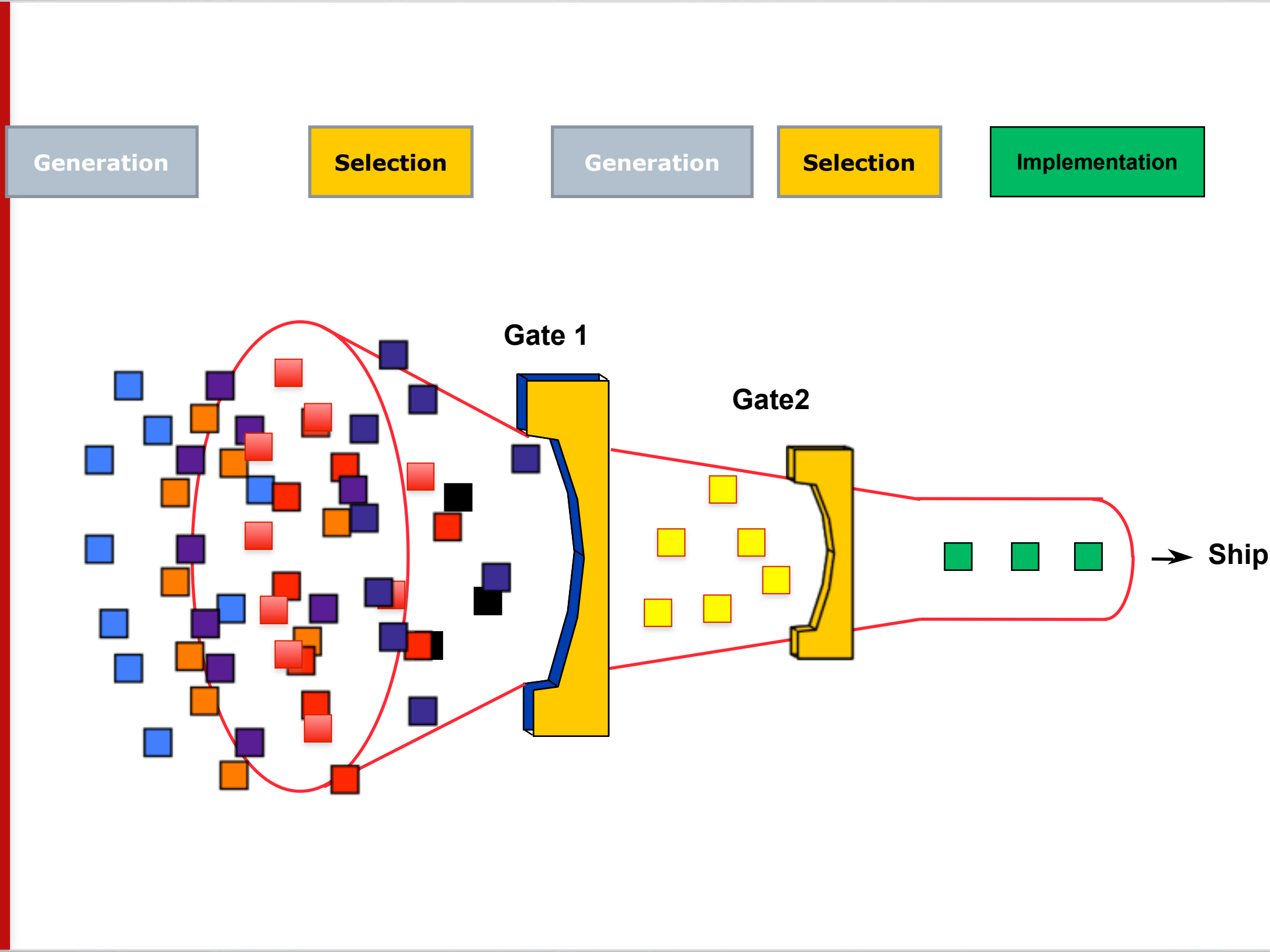
- Knowledge is **unevenly distributed** in society - Fredrich von Hayek (1945)
- Knowledge is **sticky** - Eric von Hippel (1994)



# Accessing “Extreme Value” Outcomes Critical to Innovation



# Locus of Innovation and Selection Shifting



# External Innovation Can Help Find Extreme Values via Competitions or Collaborations (Boudreau & Lakhani 2009)



## Competition

- Innovation problem requires diversity of approaches
- Contributions tend to be substitutes
- Arms-length, rules based contracts
- External innovators are competitive
- Driven by extrinsic motivations and profits



## Collaboration

- Innovation problem requires cumulative knowledge building
- Contributions range from mix&match to co-production
- Informal, norms-based governance
- External innovators are cooperative
- Driven by intrinsic and extrinsic motivations



# Many Firms Are Using External Innovation

<b>COMPETITIVE MARKETS</b>	<ul style="list-style-type: none"> <li>■ Apple Inc. iPhone (application store)</li> <li>■ InnoCentive.com (scientific problem solving)</li> <li>■ Local Motors Inc. (car design)</li> <li>■ Ryz (shoes)</li> <li>■ TopCoder Inc. (software code)</li> </ul>	<ul style="list-style-type: none"> <li>■ Cloud computing initiatives (Amazon.com Inc. and Google)</li> <li>■ Gore-Tex</li> <li>■ Personal computer platforms and hardware "OEMs"</li> <li>■ Google Android (hardware development)</li> </ul>	<ul style="list-style-type: none"> <li>■ SAP (third-party applications)</li> <li>■ Facebook Inc. (advertisers and widget developers)</li> <li>■ Most Web portals, yellow pages</li> <li>■ eBay Inc., Craigslist Inc.</li> <li>■ Big Idea Group (innovation hunts)</li> <li>■ Video games on consoles</li> </ul>
<b>COLLABORATIVE COMMUNITIES</b>	<ul style="list-style-type: none"> <li>■ Threadless.com (T-shirts)</li> <li>■ Google Android (software development of operating system)</li> </ul>	<ul style="list-style-type: none"> <li>■ Video game "modders" (such as Valve Corp.'s Half-Life platform)</li> <li>■ Linux and open-source development (such as TiVo Inc. and Motorola Inc.'s use of Linux)</li> <li>■ Medical device companies and physicians (user innovators)</li> <li>■ Wikipedia</li> </ul>	<ul style="list-style-type: none"> <li>■ Apple Inc. iPhone ("jail breakers")</li> <li>■ Big Idea Group (insight clubs)</li> <li>■ Communispace Corp. (product feedback and innovation communities)</li> <li>■ SAP (developer network)</li> <li>■ Statacorp Lp (statistical software module development)</li> </ul>



# External Innovation Being Pursued Across Business Value Chain



- P&G
- Syngenta
- Cisco
- Eli Lilly

- Threadless
- Local Motors

- Local Motors

- Starbucks
- Victor & Spoils
- Dell
- Intuit

- SAP

# Innovation Tournaments are Historically Important & Currently Popular



**The Duomo - Florence**  
**1418 - Up to 2,000 Florins**



**The Longitude Prize**  
**1714 - Up to £20,000**



**Invention of Food Canning**  
**1800 - Up to 12,000 Francs**



**Ansari X-Prize - Space Travel**  
**1996 - \$10,000,000**



**Scientific Problem Solving**  
**2001 - Average \$30,000**



**Local Motors - Car Design**  
**2008 - Over 35000 Submits**







# Research Shows Solutions Arrive From Unexpected Sources (Jeppesen & Lakhani 2010)

## 1. What explains which problems get solved?

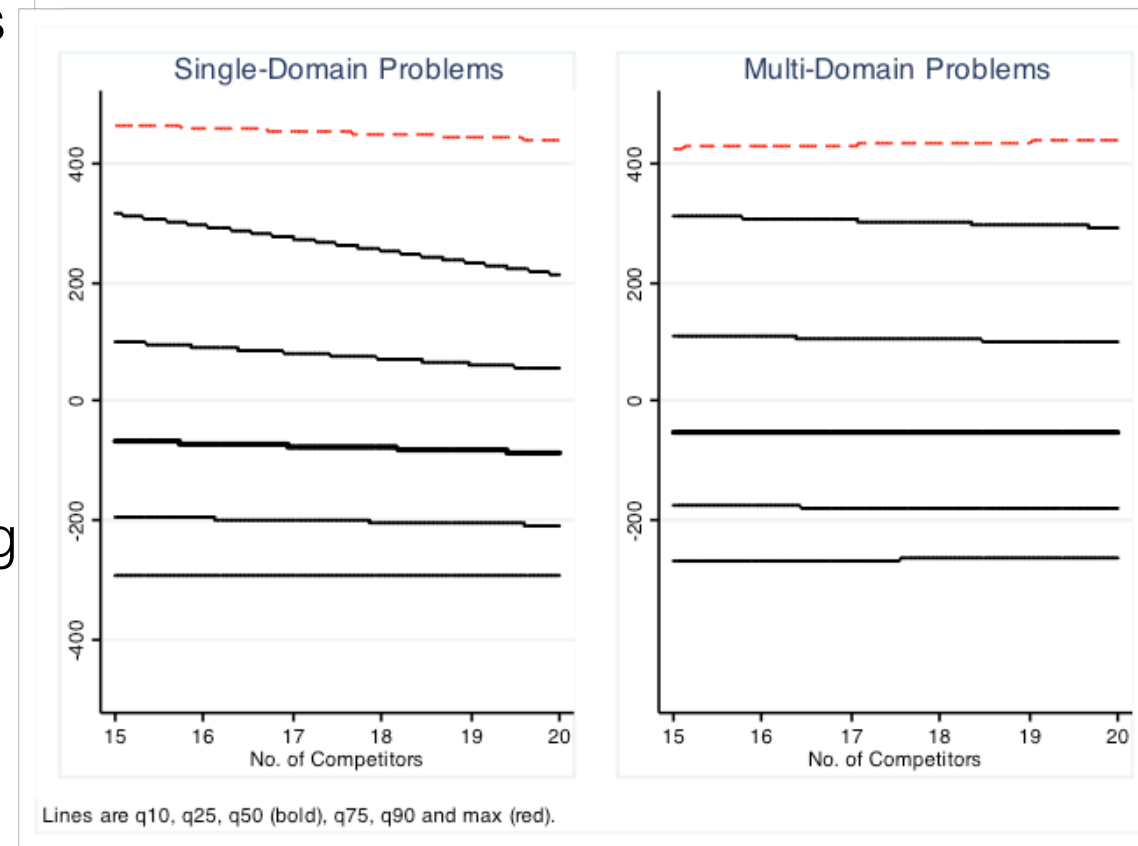
- Heterogeneity in the scientific interests of the pool of solvers competing to win
- Specialization in the solver pool

## 2. What explains who creates a winning solution?

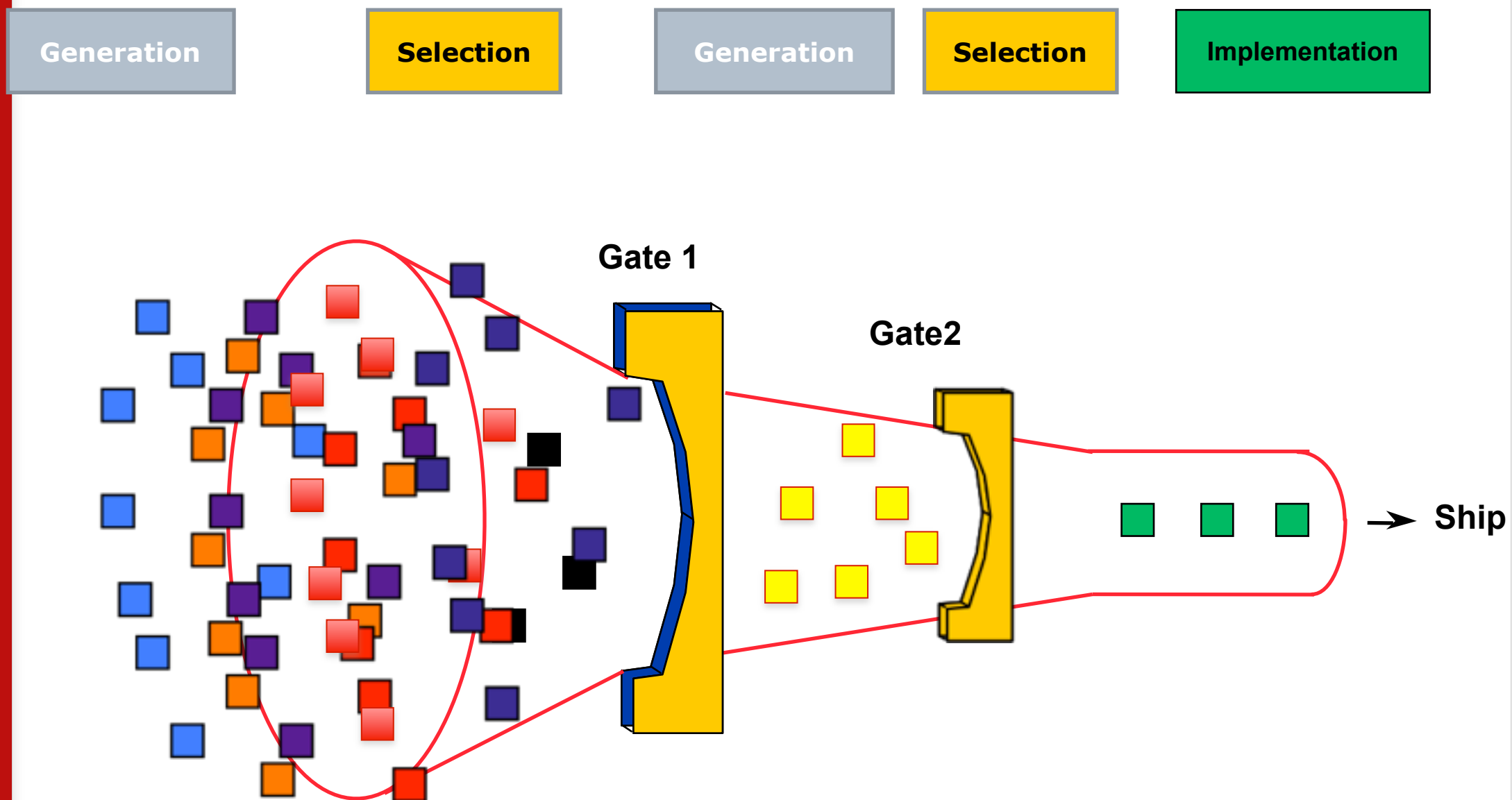
- Technical Marginality: Increasing distance between solver's own field of expertise and the problem field
- Social Marginality: Women scientists, when they enter, more likely to win

# External Contests Have Inherent Tradeoffs Between Incentives and “Extreme Value” Outcomes (Boudreau, Lacetera & Lakhani 2010)

- Key question in contest design is about how many competitors should enter?
- Lots of entry means lower probability of winning - less incentives to work hard
- But this could be offset by finding an outlier response as more people come on
- Problem uncertainty can moderate outcomes

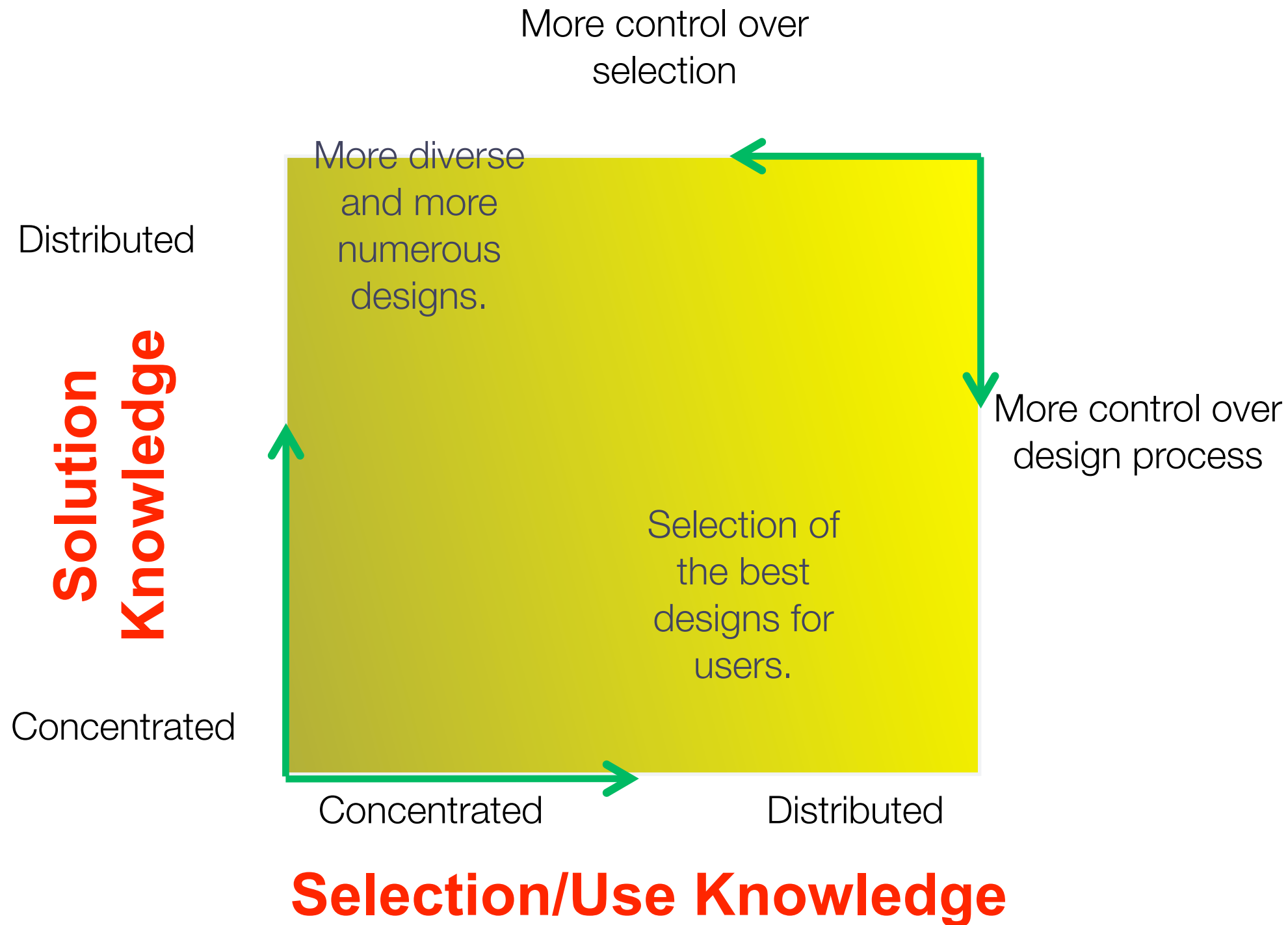


# Back to the Innovation Funnel

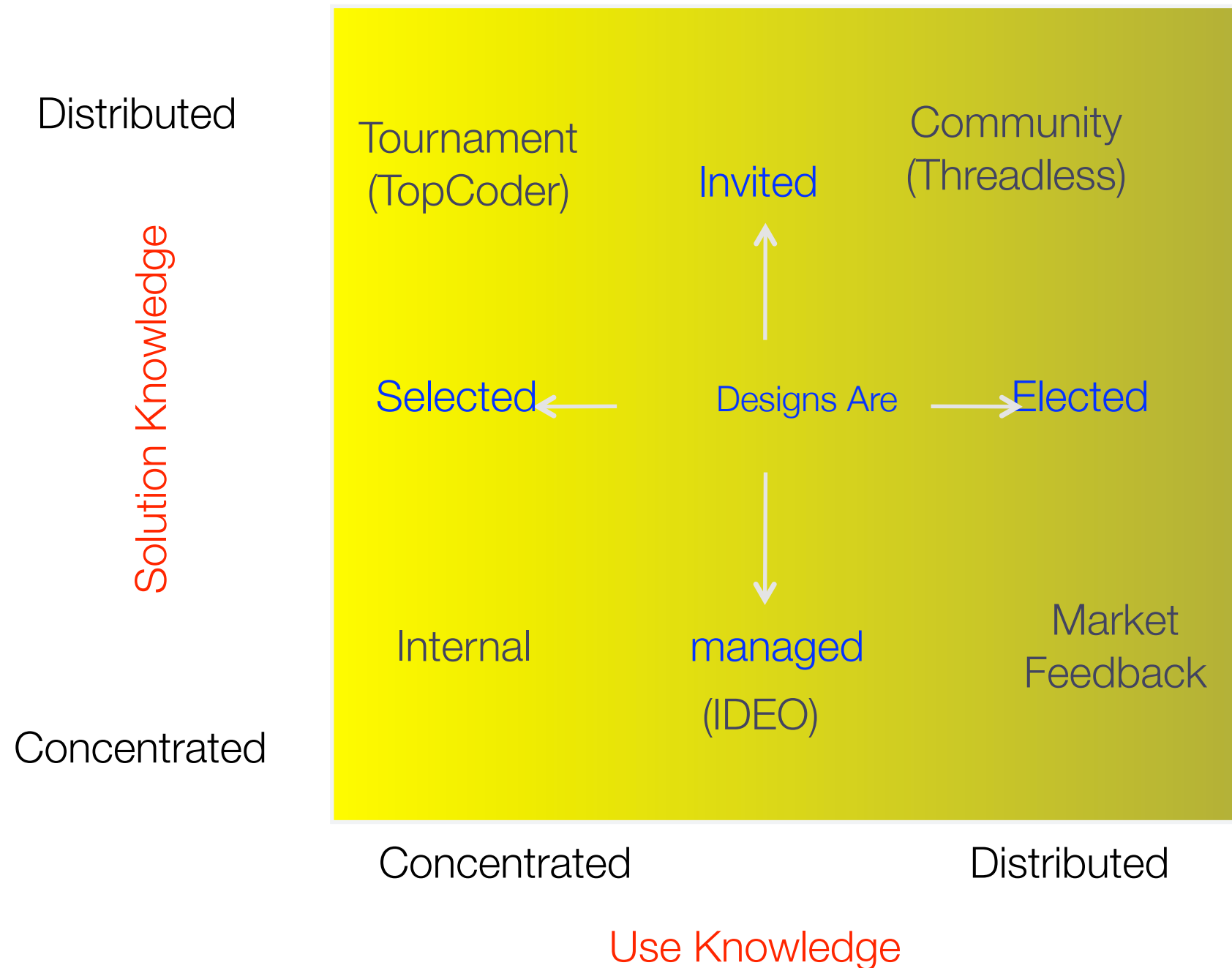




# Locus of Innovation Generation and Selection Depends on Knowledge Boundaries



# Locus of Innovation Generation and Selection Depends on Knowledge Boundaries



Key Challenges	Key questions
Aligning the organization	<ul style="list-style-type: none"> <li>• How to create the culture to support external innovation?</li> <li>• How to motivate employees to support it through incentives and others?</li> <li>• What organizational changes need to be implemented?</li> <li>• How will you deal with out-bound intellectual property concerns?</li> </ul>
Defining the problem	<ul style="list-style-type: none"> <li>• Which problems should be put forward for outsiders to solve versus which problems should be kept internally?</li> <li>• How to best communicate the problem to the outside?</li> </ul>
Choosing the platform	<ul style="list-style-type: none"> <li>• Should you build your own crowd or look to the crowd used by an existing platform of external innovation?</li> </ul>
Filtering the submissions	<ul style="list-style-type: none"> <li>• Will you choose the best idea internally or leave it to the outside world to select?</li> </ul>
Incorporating the idea	<ul style="list-style-type: none"> <li>• How do you bring the idea back into the organization (e.g., how do you motivate people to accept it and execute on it)?</li> <li>• What are the intellectual property considerations when bringing an idea in?</li> </ul>
Building a sustainable model	<ul style="list-style-type: none"> <li>• How do you institutionalize the process to move beyond “one-off” applications?</li> </ul>







# Thanks!

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